

I claim:

1. An apparatus for creating therapeutic charge transfer in tissue, comprising a coil generating a changing magnetic field to induct an electric field in the tissue exceeding 10 mV/cm
5 when said coil is 5 cm from the tissue.
2. The apparatus according to claim 1, wherein said magnetic field is saw-tooth shaped.
3. The apparatus according to claim 2, wherein said magnetic field has a growth phase and a decay phase, a duration of said
10 growth phase being at least ten times a duration of said decay phase.
4. The apparatus according to claim 3, further comprising a control circuit controlling a current fed to said coil, said control circuit including two subcircuits and a switch for
15 switching between a first of said subcircuits and a second of said subcircuits, said first of said subcircuits causing said growth phase, said second of said subcircuits causing said decay phase.
5. The apparatus according to claim 4, wherein:

each one of said subcircuits has a respective λ equaling an inductance (L) divided by a resistance (R) of said respective one of said subcircuits; and

said λ of said second subcircuit is at least ten times said λ
5 of said first subcircuit.

6. The apparatus according to claim 4, wherein said first subcircuits has a λ no greater than 1, λ being calculated by dividing a resistance (R) of said first subcircuit by an inductance (L) of said first subcircuit.

10 7. The apparatus according to claim 4, wherein said second subcircuit has a λ no less than 10, λ being calculated by dividing a resistance (R) of said second subcircuit by an inductance (L) of said second subcircuit.

8. The apparatus according to claim 4, wherein said second
15 subcircuit includes an IGBT for increasing a resistance of said second subcircuit.

9. The apparatus according to claim 1, wherein said coil is configured to receive a current exceeding 2000 V.

10. The apparatus according to claim 1, wherein said coil has a duty cycle of at least ten percent.

11. The apparatus according to claim 10, wherein said coil has a duty cycle of at least eighty percent.

5 12. The apparatus according to claim 1, wherein said coil is liquid cooled.

13. The apparatus according to claim 12, wherein said coil is cylindrical and has an inner channel and an outer channel through which coolant can be passed to cool said coil.

10 14. The apparatus according to claim 1, wherein said magnetic field has an asymmetric waveform.